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Beyond the Tyranny of Averages

EXECUTIVE SUMMARY

Development Progress from the Bottom Up

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At the start of the new millennium, 189 United Nations member states declared war on extreme poverty in all its forms. The international community subsequently met its global target to halve the number of people living in extreme poverty since 1990, but the prognosis is less rosy when it comes to a worrying trend of growing inequality within countries. "One in five persons in developing regions still lives on less than $1.25 per day" (UN, 2015), while "the majority of the world's population lives in societies that are more unequal than 20 years ago" (UNDP, 2013).

In spite of these trends, policymakers often fall into the trap of evaluating progress from the top-down, rather than the bottom-up. Bilateral aid agencies and multilateral development banks tend to use national-level indicators (e.g., GDP per capita, child mortality rates) to select the countries and sectors where they will work. These national aggregates mask hotspots of deprivation within countries (e.g., provinces, districts, municipalities), which appear to be widening. India is case in point: while the World Bank classifies India as a lower-middle income country with an average per capita income of $1,598 (in 2015), the richest state (Goa, $4,903) had a per capita income seven times that of the poorest state (Bihar, $682).

If governments and their development partners are to succeed in achieving sustainable development for all, they must not succumb to the "tyranny of averages" (Coontz, 2013), but rather view the world from a subnational perspective. Otherwise, they will overlook pockets of deprivation and miss opportunities to target resources to those communities and individuals that are most in need of assistance. Getting more granular insights on the role of official development assistance (ODA) in addressing subnational poverty is of even greater importance in the post-2015 era, given the explicit mandate within the Sustainable Development Goals (SDGs) to "leave no one behind".

Yet, measuring and monitoring differences within countries is notoriously difficult. Political imperatives, competing organizational priorities, and logistical impediments all dampen enthusiasm for collecting data disaggregated by geography and demography. As a result, the most commonly used measures of development inputs and outcomes are often ill suited to detecting vulnerable demographic groups and communities. Governments and their development partners may inadvertently worsen geographic inequalities in their zeal to achieve the best possible value-for-money in the delivery of assistance.

Over the past five years, AidData and its partners have worked with numerous governments and development partners to help close this evidence gap. With generous financial support from the United States Agency for International Development's Global Development Lab, they have identified the geographical locations of nearly 70,000 development projects worth approximately $1.23 trillion across the globe. As a result, there is now an abundance of geographically disaggregated data we can use to assess: who is funding what, where, and to what effect at the subnational level?

In the *Beyond Tyranny of Averages* report, we draw upon this body of work to shed light on two critical questions: (1) to what extent is the international community channeling resources to the least developed regions within countries and (2) under which conditions does this assistance help local communities reduce spatial inequality – the uneven distribution of public services, infrastructure, wealth, and opportunity? This executive summary highlights key findings from this retrospective analysis and presents a forward-looking roadmap for countries and their development partners to fully harness the subnational data revolution to leave no one behind.

Targeting: Is development aid responsive to spatial inequality?

There is a strong rationale for why aid should explicitly target the poorest and least developed communities within aid-recipient countries. Aid projects are uniquely positioned to reach high-risk areas with low economic returns, which would deter private investors (Mosley,

1987, pp. 94-95; Chandy et al., 2014). Moreover, if development partners aim to eradicate poverty (in all its forms), there is an ethical imperative to ensure that the benefits of their investments accrue to poor regions that would otherwise be neglected (Mosley, 1987; Briggs, 2017).

So, does foreign aid actually reach the poor? The litmus test must not merely be whether the poorest countries receive more aid, but whether development partners are targeting the preponderance of their assistance to the poorest regions within those countries.[1] To analyze how development partners allocate their assistance at the subnational level, we use geocoded data produced by AidData from project-level information reported by the World Bank globally for the years 1995-2014 (3400 projects, 141 countries), as well as the aid information management systems of Malawi for the period 2000-2011 (269 projects, 27 donors) and Nigeria for the period 1988-2014 (74 projects from 28 donors).[2] We also draw upon related research from Dreher et al. (2015) on the subnational distribution of Chinese development finance. It is important to note that these geocoded locations do not necessarily correspond to areas where interventions actually took place, but localities where projects were targeted. We summarize four findings below.

Finding 1: Development partners put a premium on economic efficiency; they concentrate their aid investments in wealthier regions with more beneficiaries

In a world of scarce resources and seemingly limitless need, policymakers face a fundamental dilemma: do they expend more to reach the poorest of the poor (who are generally located in remote and hard-to-reach locations) or do they seek to help the greatest number possible within their budget constraints? If decision-makers are motivated by economic efficiency, we would expect to see them target aid in such a way that is likely to reduce poverty for the maximum number of people at the minimum possible cost.

In fact, this is exactly the case. Population density, income, and road access strongly predict which subnational regions receive international development finance. In other words, development partners are allocating more aid to densely populated and richer regions with better infrastructure than their geographically disadvantaged counterparts. If the mark of a pro-poor development organization is that it targets a disproportionate share of its investments to the poorest of the poor and the least developed geographic areas, donors appear to be falling short of this aspiration.

Finding 2: Economically efficient aid, however, is unlikely to help the poorest regions break free from poverty and may worsen regional inequality

Due to poor physical infrastructure and remoteness, delivering public services and private goods in sparsely populated, rural areas is far more costly than doing so in densely populated, urban areas. In response, development partners appear to maximize their "value-for-money" by targeting assistance to reach the greatest number of beneficiaries possible, at the minimum possible cost per beneficiary. This may explain why urban areas and infrastructure-rich regions attract a disproportionate share of aid investments, the benefits of which can spill over to a greater number of people. Nonetheless, this strategy may unintentionally worsen inequality within countries. Economically efficient aid targeting not only makes it far more difficult to reach the poorest of the poor, but it also creates the possibility that donors will inadvertently make already poor regions relatively worse off than their geographically favored peers.

Finding 3: World Bank project investments do not appear to be politically expedient, but Chinese aid disproportionately benefits the birth regions of national leaders

The distribution of aid at the subnational level could also be vulnerable to capture by politicians seeking to gain leverage or curry favor with domestic constituencies. Elected officials may use aid funds to support projects that increase their odds of staying in power. Rather than channeling investments to the neediest communities, they may succumb to political pressure to buy votes or reward allies, even when this behavior yields few development benefits – or development benefits for only a few. If decision-makers were motivated by political expediency, we would expect to see that the birth regions of national leaders receive a disproportionate amount of aid, as compared to other regions.[3]

It may be easier to game the system with some types of aid than others. We find no evidence that World Bank projects disproportionately favor the birth regions of national leaders. Meanwhile, Dreher et al. (2015) find that Chinese aid does indeed flow to politicians' home areas. This difference may be driven by the degree of autonomy international donors grant their host government counterparts: the World Bank's "due diligence" policies and procedures may deter national leaders from misuse of its investments, while China's "principle of non-interference" cedes substantial authority to its partner countries to design and implement development projects as they see fit.

China's hands-off approach may inadvertently render its development finance more vulnerable to political capture. However, this is likely not unique to China. Other donors that adopt a similar policy of non-interference may be equally vulnerable to this type of domestic political manipulation.

Finding 4: Aid allocation favoring urban areas may be politically expedient, but it perpetuates poverty in remote regions with less political clout

Development partners have not been particularly successful in responding to spatial inequalities: aid projects are seldom targeted to geographically disadvantaged regions where the needs are greatest. While policymakers may have valid reasons to pay attention to the concerns of wealthier, urban residents with greater bargaining power, the net effect of this preoccupation is that the needs of the poorest citizens appear to hold little clout in determining subnational aid allocation decisions. As spatial inequalities compound over time, they exacerbate pre-existing cleavages between groups, setting in motion a vicious cycle of discrimination and deprivation (e.g., Bird et al., 2010; Lamichhane, 2015). This status quo can have far-reaching consequences: slowing economic growth, eroding social cohesion, undermining trust in public institutions, and heightening the risk of violent unrest (Alesina et al., 2004, 2016; Cederman et al., 2013; Dreier et al., 2001).

Effectiveness: Is development aid improving the lives of local communities?

The poorest regions within countries lag behind geographically advantaged regions on various measures of development progress. They are also increasingly at risk of being "left behind" as development partners funnel more resources into relatively well-off regions. But what is the relationship between aid and progress (or lack thereof) at the local level? Do development projects need to be located in the poorest regions to have positive development impacts?

Scholars and practitioners have long debated the effects of aid, asking whether, when, and how it helps countries achieve better development outcomes. Fortunately, the growing availability of location-specific information (e.g., satellite imagery, household surveys, mobile phone data) is fueling a new wave of aid effectiveness research at the subnational level. We synthesize insights from this body of work to showcase how geographically precise data can help us understand aid's impact on four local development outcomes: economic growth, poverty, governance, and environmental protection.[4]

Economic Growth: The evidence is mixed on whether aid bolsters local economic growth

To what extent does aid promote broad-based economic growth that has the potential to lift communities out of poverty? If there is anything close to consensus, it is that aid is modestly associated with positive growth over the long-term, at least at the national level. Research on the aid-growth relationship at the subnational level has so far produced mixed evidence. While existing studies employ creative strategies to address the non-random assignment of aid projects, reverse causality, and other endogeneity problems, they are limited by their reliance on nighttime light as a proxy for economic growth. This has led to a wave of studies that seek to explain alternative indicators of development progress to understand whether, when, and how aid impacts other elements of human welfare at the local level.

Poverty: Aid generates modest local improvements in health, education, and water

The growing availability of subnational aid information and georeferenced survey data – such as Demographic and Health Surveys, Living Standards Measurement Study surveys, and Afrobarometer surveys – makes it possible to more precisely test the extent to which specific development inputs (aid-funded interventions) affect specific outcomes at the local level in low- and middle-income countries (LICs and MICs). The emerging body of evidence suggests that health, education, and water projects tend to have modest positive effects on local development outcomes in their respective sectors. Though modest, the effects of aid on indicators like disease prevalence and educational exposure can have important spillover benefits (or drawbacks) that may not be limited to progress on those immediate indicators.

Governance: Some types of aid may fuel local corruption and incite conflict

Greater access to location-specific data has dramatically expanded the ability of scholars and practitioners to assess how aid affects the quality of subnational governance in LICs and MICs.

Georeferenced data is also helping scholars sort out the mechanisms that may explain country-level relationships between aid, governance, and conflict. The emerging body of evidence provides some grounds for concern. Under certain conditions, aid may fuel corruption, reduce social trust, short-circuit domestic accountability relationships, and increase violent conflict. Nonetheless, much more research will likely be needed – using alternative measures of aid, governance, and conflict – across a larger number of donors and developing countries before it will be possible to draw strong conclusions.

Environmental Protection: Aid has a mixed track record on local biodiversity and conservation outcomes

To what extent do aid projects help or hurt forest protection and biodiversity conservation goals? Satellite data allows researchers to look at the discrete effects of projects on environmental quality at the local level over a relatively long period of time using geospatial impact evaluations. Some evidence suggests that projects intended to preserve the environment are often effective at achieving their goals. For example, AidData and the Independent Evaluation Office of the Global Environment Facility (GEF) found positive impacts of land degradation projects on forest cover and vegetation productivity (IEO, 2017). On the other hand, another AidData evaluation of a joint project by the World Bank and the German Development Bank to demarcate and legally protect 38 million hectares of indigenous lands in the Brazilian Amazon from 1995 to 2008 found little evidence that the project had positive conservation effects.

Roadmap: Towards a subnational data revolution that leaves no one behind

If policymakers and practitioners want to translate the rhetoric of "no one left behind" into practice, they must prioritize resources and attention to benefit at-risk communities. While there is a burgeoning subnational data revolution that is beginning to bear fruit, the international community will need to marshal additional resources, innovate new methods, and mobilize political commitments for this vision to become a reality. Below we lay out several forward-looking priorities for countries and their development partners to fully harness the subnational data revolution to leave no one behind.

Priority 1: Invest in spatially precise outcome measures to systematically monitor progress against the SDGs and channel resources to communities lagging behind

A central impediment to effective targeting and rigorous evaluation of development investments is the lack of consistent, reliable, and geographically disaggregated data on development outcomes. Researchers have come up with creative strategies to measure subnational poverty, but proxies are far from perfect. Few would argue against the merits of having more precise estimates of local development outcomes in principle. Yet, policymakers and practitioners frequently express concern that collecting such data is prohibitively expensive and technically difficult such that it is practically infeasible.

To harness the subnational data revolution, governments and their development partners will need to identify alternative ways to dramatically decrease the costs and increase the ease of sustainably generating these estimates. One way that they can do this is by investing more concertedly in initiatives that crowd in the interest of entrepreneurs, researchers, and data scientists to help solve this subnational data problem.

Priority 2: Align incentives by making disclosure of subnational project locations mandatory, rather than optional, in national and global reporting standards

When it comes to reporting on their activities, there are powerful incentives for governments and organizations to race to the bottom and do the minimum possible absent rewards or penalties. Even in fairly robust global reporting regimes, providing precise point-level location information (i.e., latitude and longitude) for funded activities may be voluntary, rather than required. Reliable access to this type of granular information is even more difficult to come by in domestic financial documentation, such as national budgets and expenditures published by governments or what development partners report into country-owned aid information management systems.

At the national level, transparency advocates and reform-minded policymakers should consider codifying more stringent standards in open data initiatives and access to information laws that mandate the publication of precise location information for public sector investments. At the international level, global standards bodies and watchdogs might also amp up the positive (and negative) pressure for international organizations, bilateral aid agencies, multinational corporations, and South-South Cooperation providers to do the same.

Priority 3: Demonstrate the value of georeferenced data and reduce barriers to entry for researchers, policymakers, and practitioners

One of the perennial challenges for data producers is making the case for why it is worth the effort for busy policymakers and practitioners to use this information in their work (Masaki et al., forthcoming). This challenge is particularly acute for georeferenced (or geospatial) data that is often unfamiliar to public, private, and civil society leaders who have historically drawn upon cross-national or national-level aggregates to support their decision-making. Even for researchers and analysts predisposed to adopt new data sources and methods, the learning curve to access and process geospatial data may dampen their enthusiasm, particularly if there is only nascent demand for subnational analyses.

Funders and producers of georeferenced data and analysis should take a cue from the literature on the diffusion of new innovations and its central hypothesis that the adoption of new technologies follows an S-curve. AidData and its consortium partners spent several years promoting the idea of geocoding, subnational targeting analysis, and geospatial impact evaluation before seeing much evidence of take-up. However, over the course of the last year we have entered a period where we are seeing rapidly accelerating uptake and diffusion—the sharp upswing of the S curve—among bilateral and multilateral development finance institutions, researchers, in-country civil society organizations and think-tanks. A proactive program of sustained outreach and training to accompany the dissemination of new georeferenced data and tools was an important driver of this uptake.

Priority 4: Integrate spatial inequality diagnostics into pre- and post-project assessments to transparently monitor how disadvantaged communities benefit from investments

Evidence of spatial inequalities can easily be drowned out by other arguments, such as economic efficiency or political expediency. Ultimately, if we want to foment a subnational data revolution to leave no one behind, people in positions of authority must not only know where to find spatially precise data and how to use it, they must also heed the implications that come with it. As Custer and Sethi (2017) write, this requires that we "crowd-in, rather than short-circuit, the interest of political actors in favor of using data as they allocate resources, target projects, and evaluate development programs" (p. 81). In other words, what would make it worth the while of policymakers and practitioners to pay attention to spatial inequalities when making investment decisions?

One possibility would be to mainstream the use of subnational analyses into the standard procedures by which governments and their partners design, appraise, and report on new development projects. While their processes vary in scope and complexity, most governments and organizations have set procedures they must abide by in the course of preparing new development investments for consideration. If more organizations required those appraising projects to explicitly assess how these investments would likely impact geographically disadvantaged communities, this could provide a natural use case (and incentive) for policymakers and practitioners to ensure they are reducing rather than exacerbating inequalities between communities. The same could also be said for including this in post-project evaluations.

End Notes

1 The authors use project counts as the baseline dependent variable because they are more precise than the estimated amount of aid commitment, given the data available. We conducted this analysis at two levels of aggregation: ADM1 (e.g., provinces) and ADM2 (e.g., districts). Our conclusions remain the same whether we use ADM1 or ADM2 as the unit of analysis. See Appendix A for a further discussion.

2 Not all development partners regularly report their investments into the country-owned aid information management systems and, even if they do, these records may not include the geographic locations of projects down to the district-level (ADM2). For this analysis, we include only donor investments that were reported into the AIMS and that were geocoded by AidData (using available project-level information).

3 For this analysis, we produced a dataset with the birth regions of heads of state from 174 countries between 1994-2014. While not included in this analysis, it should be noted that there are other potential drivers of political aid allocation that may have greater import on leaders' aid allocation decisions than allegiance to their home regions. Detailed approach to data collection can be found in the main report.

4 For more information, see: http://aiddata.org/aiddata-research-consortium

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About AidData

AidData is a research lab at the College of William & Mary. We equip policymakers and practitioners with better evidence to improve how sustainable development investments are targeted, monitored, and evaluated. We use rigorous methods, cutting-edge tools and granular data to answer the question: who is doing what, where, for whom, and to what effect?

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